
Iowa Farm*A*Syst

A Farmstead Assessment System

Assessing Your Hazardous Materials Storage & Management



Simple

Confidential

Accurate

What is Iowa Farm*A*Syst?

Iowa Farm*A*Syst is a farmstead assessment system developed to assist rural residents in protecting their water resources, particularly their drinking water. Individuals can tailor the Iowa Farm*A*Syst program to meet their needs by choosing specific topics that fit their farmstead or acreage. The Iowa Farm*A*Syst program is based on a series of 12 publications, including the following:

- Assessing Your Farmstead Characteristics (EDC 264)
- Assessing Your Water Well Condition & Maintenance (EDC 265)
- Assessing Your Household Wastewater Management (EDC 266)
- Assessing Your Open Feedlot Manure Management (EDC 267)
- Assessing Your Confinement Livestock Manure Management (EDC 268)
- Assessing Your Milking Center Wastewater Management (EDC 269)
- Assessing Your Dead Animal Management (EDC 270)
- Assessing Your Pesticide Storage & Management (EDC 271)
- Assessing Your Fertilizer Storage & Management (EDC 272)
- Assessing Your Petroleum Storage & Management (EDC 273)
- Assessing Your Hazardous Materials Storage & Management (EDC 274)
- Assessing Your Emergency Response Planning for Manure Spills (EDC 328)

Each publication gives you a brief background on the subject and an assessment worksheet to evaluate on-farm practices affecting water quality. Also included are references to Iowa environmental laws and contact information for technical advice.

Why should I use the Iowa Farm*A*Syst materials?

Seventy-five percent of Iowans get their drinking water from groundwater sources. These sources include private wells, in addition to municipal wells and rural water sources. If your drinking water comes from a private well, you have good reason to be concerned about the quality of your drinking water. A 1990 statewide survey of rural well water found that 45 percent of private wells are contaminated with coliform bacteria, 18 percent contain unsafe levels of nitrate, and 14 percent contain pesticides. The Iowa Farm*A*Syst publications help you to determine what environmental risks could threaten your family's health and financial security and suggest the resources to help make necessary changes.

How do I start assessing my farmstead?

The 12 Iowa Farm*A*Syst publications are each designed to be stand-alone publications. However, the first step to assessing your farmstead should be to draw a map of the area, labeling any potential sources of contamination. *Iowa Farm*A*Syst Assessing Your Farmstead Characteristics* can help you get started. Every farmstead is unique. You need to evaluate your farmstead's site characteristics to determine the potential for groundwater and surface water contamination. You cannot change the features of your farmstead, but once you are aware of them you can modify your activities to minimize the potential for groundwater contamination. After you have mapped your farmstead, consider what management decisions may be affecting the quality of your water resources. This process will help you to prioritize which of the other Iowa Farm*A*Syst assessments you may want to complete.

For more information or to download additional Iowa Farm*A*Syst publications, visit www.iowafarmasyst.com

or

**Contact Rick Robinson, Iowa Farm Bureau
(515) 225-5432**

Publications are also available through the Iowa State University Extension Distribution Center at www.extension.iastate.edu/store or 515-294-5247.

Hazardous Materials and Solid Waste

*H*azardous products can be found on every farm and in every household. They are used for general cleaning, home improvement projects, automobile and farm equipment maintenance, lawn and garden care, crop protection, livestock management and a variety of other tasks. In some instances, using hazardous materials, such as lubricating oils, solvent cleaners, oil based paints and pesticides is necessary. In other cases, safer alternatives are available.

Hazardous products used around the farm and in the home contain ingredients that can pose threats to your health or the environment if not handled properly. Products such as motor oil or pesticides, if disposed of on the ground may contribute to the pollution of your drinking water or nearby stream. Vapors from paint thinner and other solvents can be hazardous to breathe.

It is up to you to understand how to make good decisions for the safe use, storage or disposal of hazardous products around your farm and in your home.

For each chemical or product you buy, consider these questions: Which product meets your needs? Are there safer alternatives? Is it dangerous to children? What is the best way to store it? How can you use it safely? How do you dispose of remaining materials properly?

This publication will help you look at your hazardous materials management practices and evaluate the best options for the disposal of most hazardous materials and other solid waste generated in your home or on the farm. You will also be alerted to improper and illegal disposal methods.

NOTE: This publication does not summarize all the laws related to hazardous materials and solid waste disposal. Due to the technical nature of Iowa law, which includes Iowa Department of Natural Resources (DNR) rules as well as county-specific rules, you are advised to contact your regional DNR field office if you have questions not covered in this publication. Contact information for the offices is located in the “For More Information” section found on page 15.

This publication is divided into three parts:

- 1) **Managing hazardous materials and solid waste** - a fact section that provides reasons for making proper management decisions.
- 2) **For more information** - a list of resources that can provide more information.
- 3) **Assessing your waste management** - a simple and confidential self-evaluation of your current management practices and identification of hazards related to air, land and water quality as well as to your immediate health and safety.



“How do I know if something is hazardous?”

A product is hazardous if it has the potential to cause harm. Household hazardous materials are useful products that pose a significant risk to health, safety or property when used, stored or disposed of improperly. Products that are **flammable, toxic, corrosive or reactive** are considered hazardous. You can generally tell which products have hazardous ingredients by reading the label.

Open a cabinet in your shop, garage, kitchen or basement and read a few labels. The signal words-- **CAUTION, WARNING, DANGER or POISON** tell you the product is hazardous. The signal words draw your attention to important human health and safety information.

Products that don't have any of these words on the label are least hazardous.

The signal words-- **Caution, Warning, Danger or Poison** tell you the product is hazardous.

Health effects can range from minor problems, such as irritated skin or watery eyes, to more serious problems, such as burns, poisoning, cancer or death.

However, the absence of a warning on a product label does not necessarily mean that the product is safe, as old products may not provide consumer information on the label.

Before you purchase or use a product, take the time to read the label, even the tiny print. Labels provide details about how to safely use, store and dispose of a product.



“What effects can hazardous materials have on my health?”

It is important to understand the difference between hazards to human health and hazards to the environment. Health problems can be caused by chemicals in some of the products you use if warnings and directions are not followed. Health effects can range from minor problems, such as irritated skin or watery eyes, to more serious problems, such as burns, poisoning, cancer or death.

You can be exposed to a product ingredient by 1) ingestion, including accidental ingestion by drinking, eating or smoking when a substance is on your hands; 2) inhalation, breathing dust or fumes; or 3) absorption through contact with skin or eyes. The potential for harm from exposure to a hazardous product depends on:

- the type of chemicals in the product.
- how much of the chemical you are exposed to.
- how frequently you are exposed.
- your size, weight and health status.

First-aid instructions also are provided. If you need more information about a product than is provided on the label, you may want to request a Material Safety Data Sheet (MSDS) from the manufacturer or consult the Iowa Poison Control Center at 1-800-222-1222.

If exposure occurs, some harmful effects appear immediately. Typical symptoms are nausea, skin irritation, burning eyes, dizziness and headaches. Other effects, such as kidney or lung damage or cancer, take a longer time to develop. A person who used hazardous products frequently, without adequate safety precautions or proper ventilation, may experience these serious health effects.

To avoid accidental exposure...

- read and follow all safety precautions on the product label.
- always work in a well-ventilated area, especially if the product contains a solvent.
- wear protective clothing such as rubber gloves and goggles as directed on the product label.



“What effects can hazardous materials have on the environment?”

How we manage products on or near our property can affect the environment. Ingredients in household products can be hazardous to plants and animals in natural environments. Pesticides or motor oil washing into a stream, for example, can harm fish. Improper use or disposal of hazardous products can pollute our land, water or air.

Once released, some chemicals can be taken into the environment without harmful effects. Others, however, can have very negative effects. Some uses, clean-up practices, or disposal practices may not seem like they could lead to trouble, but repeated over time, the effects can accumulate. Everyone has a part in minimizing the

environmental impact of use and disposal. Even old habits should be examined for potential risks.

When choosing from among several brands of the same kind of product - for example, paint stripper or degreasers, read

the label to learn which will meet your needs most safely. Selecting less toxic products for the job is a better choice for the environment. Some alternatives to common household hazardous products are suggested in the graphic below.

BETTER CHOICES FOR THE ENVIRONMENT

Moth balls - use cedar chips

Oil-based paint - use latex paint

Products in aerosol containers - use products in pump spray containers

Lye-based drain cleaners - use enzyme-based drain openers

Oil-based wood stains and varnishes - use water-based wood stains and varnishes

Lye-based oven cleaners - use non-toxic oven cleaners without lye

Degreasers containing organic solvents - use citrus-based degreasers



“How should I store hazardous materials on my farm?”

The threat of hazardous materials is not limited to their use on the farm. Many materials pose a health and safety threat when stored. When storing hazardous household and farm products, immediate concerns include ensuring child safety and avoiding immediate personal injury. The long term concerns include ensuring the quality of the home environment (air and water quality) as well as the protection of the local environment.

It is important for example, to separate acids from bases (caustics) and other

hazardous products to prevent dangerous chemical reactions. Liquid products should be stored away from dry products, or in a way that prevents liquids from leaking onto dry products. For example, store dry products on a shelf above liquid products. Routinely check areas where you store household and farm products (machine shed, under the sink, in the basement). Make sure that containers are closed tightly and are not leaking, and that the sides of the containers are not bulging. Liquids should be stored so that leaks and spills are easily contained.

Hazardous materials should be stored and used at least 100 feet from any water well.

ASK YOURSELF THESE QUESTIONS ABOUT YOUR HAZARDOUS MATERIALS STORAGE PRACTICES

Do You...

- * Keep hazardous products out of the reach of children and pets, preferably in a locked, secure area?
- * Store products in their original sealed containers?
- * Store products in an upright position?
- * Clearly label, date and seal any alternative containers?
- * Store products at least 100 feet away from wells or waterways?
- * Store volatile products, such as solvents and petroleum-based fluids, in places with good ventilation and away from ignition sources?
- * Keep products from freezing?
- * Store batteries and flammable chemicals in an area shaded from direct sunlight?



“How can I minimize the waste on my farm?”

Waste is inevitable. Things which have been outgrown, broken, replaced or are just no longer needed all add to the waste produced at homes and around farmsteads. Waste doesn't just go away, it enters the environment. Good management of the wastes around your farm and home can help protect your family's health and the local environment.

Most of the waste accumulated around the farm and home is solid waste. Solid waste includes all discarded non-hazardous materials - newspapers, alkaline batteries, empty containers, old appliances, leftover food, worn out shoes... the list is endless.

Developing smart ways to deal with waste will make life easier and more pleasant. These include buying only what you need, reusing or repairing instead of replacing items and disposing of items which are no longer usable.



The recycling symbol means the product or packaging is recyclable. Check with your nearest recycling program to find out what products they will accept.

Manage Your Waste Responsibly

Buy with care - Purchase only those items you need and try to use as few hazardous products as possible. Buy only the amounts of a product that you can use.

Try to use up products and use them safely - This is the best way to minimize waste and protect your water supply.

Recycle or reuse - Many of the items used around the farm and home can be recycled or reused either by yourself or by someone you know. Take advantage of the recycling centers you have access to and don't be afraid to give away some products. Items which may be waste to you might be useful to someone else.

Know the sources of hazardous waste - By knowing which products around your farm and home are potential contaminants of the environment and groundwater supplies, you can better manage their use and disposal. This will allow you to better protect your family's drinking water supplies.

Follow safe disposal practices - Since waste is inevitable, waste disposal is inevitable as well. Following the recommendations for solid and hazardous waste disposal as described in this publication can minimize the impact on your family's health and to the local environment.



“How should I get rid of the waste products on my farm?”

When buying a product, its reuse and recycling should be a consideration. Once you make waste, you need to find a place to put it. Check with your Regional Collection Center, recycling center, trash haulers or local landfill to see what items can be recycled in your area, where items are recycled and how to prepare items for recycling. For example, plastic containers are marked with a number, usually inside the recycling symbol. Numbers 1, 2 and 3 are most easily recycled and should be the

first choice when purchasing products packaged in plastic.

You should not limit your recycling to typical store purchases such as aluminum cans, cardboard, glass and plastics. There may be scrap dealers or industrial salvage yards that want your broken appliances, used vehicles, wood and metal wastes, bricks, concrete, doors, windows and so on. There are also places that will recycle large appliances, car batteries, used motor oil and other recoverable material (see the “For

More Information” section on page 16 to locate recycling dealers).

Most communities are served by a recycling program, and farm residents are especially encouraged to participate in local recycling efforts. Look for recycling

drop-boxes in your nearest town and make use of them. If you are unfamiliar with the recycling program in your community, contact your county courthouse, your Regional Collection Center or your local landfill to learn more.



“What is a Regional Collection Center?”

Regional Collection Centers (RCCs) are permanent collection sites in Iowa that arrange for the safe transportation and proper disposal of household hazardous materials. RCCs are managed locally and accept household hazardous materials free of charge from residents living in the RCC service area. Most RCCs also accept hazardous materials from farms; however, some centers charge a modest fee for hazardous waste generated as part of the farm business. Always call ahead before delivering hazardous materials to the RCC. Many RCCs require an appointment for drop off.

Most counties are served by a Regional Collection Center. If your community is not served an RCC, a nearby program may be

able to accept your hazardous materials; however, you will likely be charged a modest fee for disposal. If you are interested in establishing an RCC in your area, contact your Solid Waste Agency or your County Board of Supervisors. For more information on Regional Collection Centers, call the location nearest you. (See the “RCC Contact Information” section on page 17.)

Toxic Clean-up Days are another option for disposal of hazardous materials. Hazardous materials are accepted free of charge during Toxic Clean-up Days, which are held periodically in the communities not served by a RCC. Toxic Clean-up Days are usually coordinated by the county Environmental Health Department or landfill.

Regional Collection Centers (RCCs) are permanent collection sites in Iowa that arrange for the safe transportation and proper disposal of household hazardous materials.



“What about permitted sanitary landfills?”

Rural homeowners can dispose of their non-recyclable and non-hazardous waste at their nearest permitted sanitary landfill, usually for a nominal fee. In some rural areas trash haulers, or commercial garbage collectors, will lease dumpsters to farmers and schedule regular garbage collection.

Permitted sanitary landfills accept only non-hazardous solid waste for disposal. Permitted sanitary landfills, which are closely regulated and managed locally, are engineered to safely contain the solid waste material as well as the by-products from their breakdown.

Landfills are constructed with a synthetic material (liner) placed over compacted clay soil. Test wells are placed around the landfill to monitor the groundwater for leaks in the system. Each day, landfill workers cover the waste with 6 inches of soil to keep moisture, rodents and birds out.

All Iowa counties are served by a permitted sanitary landfill. However, you may find that your county transports its solid waste to a permitted sanitary landfill in a neighboring county.



“Can’t I dispose of my waste on my own farm?”

On-farm dumps can be a liability to sellers, buyers, bankers, realtors and insurers.

Burning and burying have been used as waste disposal methods in many rural areas for decades. However, because state laws are becoming more restrictive and many local Iowa communities ban burning or burying, rural landowners are looking for better ways to get rid of their waste.

Disposing of waste by burning, burying or dumping can pose threats to your health and the environment. Waste of any kind that is thrown into an open dump, or even put underground, can take many years to degrade or break down. Hazardous wastes in a dump

can be washed into surface water bodies or move down through the soil and contaminate groundwater.

If your waste contains any hazardous substances, even in small quantities, it can cause other problems. Lending institutions, for example, frequently require an environmental assessment before they will consider loaning money on rural property. Property owners with known dump or burn sites may be required to tell a potential buyer or lien holder.



“What’s so bad about burning?”

In the past, many rural residents burned much of their waste. However, open burning, burn barrels and domestic incinerators do not burn hot enough to eliminate the production of toxic substances. When paper, plastics, printing inks, batteries and other common materials are burned, a toxic mix of chemicals can be released into the air. Some of these, such as mercury or lead, can be hazardous to breathe.

Eventually, most by-products from burning are removed from the air by rain or snow and are deposited on land or in water. The remaining ash and sludge also may contain heavy metals, such as lead, mercury or arsenic, in concentrations that may be toxic or damaging to the environment. With air quality becoming more of a widespread concern, Iowa has passed laws that may restrict your burning activities.



“Am I still allowed to burn?”

Rural Iowans are still permitted to burn certain non-hazardous waste materials. Burning of residential or household waste is allowable as long as there is not a stricter local ordinance. Trees and shrubs, yard waste and wood buildings can be burned on the originating farm site. Some containers, such as seed corn bags and pesticide containers from farm crop production, also can be burned; however, there are some restrictions, such as quantity and location. For specific information on burning pesticide containers, see Iowa Farm*A*Syst *Assessing Your*

Pesticide Storage and Management, publication EDC 271.

If you choose to burn waste on your farm, locate the burn site at least one-quarter mile away from any inhabited building, livestock area or waterway and far away from any water wells. Because of air quality concerns or dry land conditions, local ordinances may restrict burning. Notify your local fire official before you begin to burn. As a courtesy, notify your neighbors too.



“What about burying waste?”

Dead animals, empty farm buildings, and non-hazardous farm waste including machinery, vehicles and equipment used for crop or livestock production can be buried on the farm. Trees, brush and grubbed stumps or the ashes from their burning also can be buried. However, household trash should **NOT** be buried - it is illegal!

There are strict guidelines for burying solid waste that are meant to protect Iowa’s ground-water. Before you open up a burial pit, know the law. You will need to consider legal separation distances from any water wells, water bodies, adjacent property lines and neighboring residences. Also, burial pits should not be more than six feet deep and they should be located in moderately well drained soil. The bottom of the burial

pit should be at least two feet above the water table.

All tires, batteries, fluids, coolants, solvents and other hazardous chemicals must be completely removed from anything that is buried. Farm buildings or farm waste must be covered immediately with a minimum of 6 inches of soil and finally covered with a minimum of 24 inches of soil. To learn more about the laws concerning burial of farm waste, contact the Iowa DNR.

The laws that affect burial of dead animals are more complicated. For detailed information on burying dead animals, see Iowa Farm*A*Syst *Assessing Your Dead Animal Management*, publication EDC 270.

It is illegal to bury trash in Iowa, unless it is in a permitted sanitary landfill.



“Can I burn or bury farm buildings?”

The United States Environmental Protection Agency (EPA) considers all farm buildings to be commercial, except for the house. Barns, machine sheds, storage cribs and animal confinement buildings can be burned or buried on site if they are constructed of wood only and have dirt floors. If these buildings are constructed of more than just wood, a thorough inspection for asbestos must be conducted. If present, asbestos must be removed by licensed professionals. EPA requires that a *Notification of Demolition and Renovation* be submitted to the Iowa DNR at least 10 working days prior to the start of demolition of the structures. Additionally, all shingles and all hazardous

chemicals must be removed before the building can be burned.

Iowa DNR will assist with any questions or concerns that you have by calling 515-242-5100. To access the *Notification of Demolition and Renovation* form, contact the Iowa DNR Air Quality Bureau or download the form from their website. To locate a trained inspector, contact you local fire inspector or the Iowa Division of Labor Services. The Iowa Division of Labor Services maintains a list of contractors trained to remove asbestos. See the “For More Information” section found on page 16.

According to Iowa law, the following cannot be burned or buried:

Tires and batteries ~ Petroleum products

Cleaning solvents

Pharmacy products and equipment ~ Materials containing asbestos



“What do I do if someone dumps on my property?”

The maximum penalty for illegal dumping in Iowa is \$5,000 per day of violation.

Illegal dumping poses a threat to both the environment and to public health. Hazardous waste can seep into the ground and eventually into water sources. Dumping sites can become breeding grounds for insects and rodents. Additionally, they diminish the beauty and quality of life near these areas.

Illegal dumping, also referred to as “open dumping”, is the non-permitted disposal of waste in any public or private area. People dump waste illegally to avoid disposal fees or because it is easy. If you discover an illegal dump site on your property, notify your County Environmental Health Department or your County Board of Supervisors. The maximum penalty for illegal dumping in Iowa is \$5,000 per day of violation.

Of great concern in Iowa is the presence of illegal methamphetamine (Meth) drug labs in rural areas. The following tips can alert you to the presence of illegal drug activity:

- Strong or unusual chemical odors (ammonia, rotten eggs, garlic).
- Discarded laboratory equipment (glass jars, lithium or car batteries, tubing, syringes).

- Evidence of large quantities of cold medications or non-prescription weight loss products.
- Large number of discarded blister packages or plastic bottles with the bottoms cut out.
- Plastic buckets, 55-gallon drums or barrels, chemical cans, often with labels painted over.
- Houses or outbuildings with heavily barred windows or doors.

If you notice anything suspicious:

- Leave the area at once! Extensive training and protective gear are required before entering an area where methamphetamine is made.
- Contact law enforcement immediately. Call 911 if you think you’ve been exposed to toxic chemicals or if you believe there is an immediate risk of fire or explosion.
- Notify others who may be in immediate danger. Do not confront any suspected criminals. Let law enforcement handle all investigations.



“How can I clean up the dump on my property?”

Some people find themselves owning all kinds of hazardous and solid waste when they inherit or move onto a farm. This is an unfortunate but real problem. Property owners are almost always legally responsible for the clean-up. If you are thinking of purchasing a property, follow the “buyer beware” motto and find out as much as you possibly can about any environmental hazards. If you inherit a property containing hazardous waste or unwanted materials, you will need to make some decisions about clean-up.

Planning for the waste clean-up is the first step. Sort out and store the recyclable or reusable materials such as latex and oil based paint, wood, scrap iron or aluminum. Don’t overlook the need to remove hazardous materials from old appliances. Take your old appliances to a permitted sanitary landfill

where refrigerants and other hazardous materials will be removed and other parts will be salvaged (demanufactured). Next, locate the hazardous materials and those that you are unsure about. Plan to take these to the Regional Collection Center (RCC) or Toxic Clean-up Day for proper disposal. Take the remaining materials and prepare them to be landfilled or recycled. Remember that landfills do not accept any liquid materials. Finally, take inventory of all the materials and decide how you will safely transport them to the Regional Collection Center and/or landfill. Make sure you keep hazardous materials separated during transport to minimize your risks. Call and ask about disposal costs; some Regional Collection Centers may charge a fee. Call ahead to the landfill if you are planning to bring in large quantities of waste.



“How should I correctly manage and dispose of different products around my home and farm?”

Paints, solvents and other cleaning products

The best method for managing paints, solvents and cleaning products is to see that they are used up. Try to use up old latex and oil-based paint in other painting projects or give it to someone who can use it. Store paint in a dry place where it won't freeze. Paint usually remains usable if it mixes well when stirred and hasn't been frozen and thawed.

Do not use or give away lead based paint! Lead based paint must be taken to a Regional Collection Center or Toxic Clean-up Day for proper disposal.

Throwing out liquid paint can contaminate your water supply. Any paint which needs to be disposed of should first be dried out in a well-ventilated area away from children, pets, flames and anything that might spark. For small quantities of paint, remove the lid and let it dry in the can. Larger quantities should be poured in layers or mixed with an absorbent material, such as sawdust or kitty litter, in a water proof or plastic lined container. After the paint has been dried, seal it in a plastic bag and dispose of it in a permitted sanitary landfill.

Solvents

Disposing of solvents by dumping them on the ground or in a septic system can allow the solvents to leach into groundwater. Avoid on-farm disposal of solvents whenever possible. Always use solvents away from your water well and in a ventilated area. Store them in their original containers and out of the reach of children. Some solvents, such as paint thinner can be filtered and reused.

Clean dirty solvents by placing in a closed container and storing until the paint or other material settles to the bottom. After the sludge has been settled out, pour the clean, reusable solvent off the top. Let the sludge dry out, seal it in a plastic bag, and take it to a permitted sanitary landfill. Unused solvents

can be taken to your Regional Collection Center or Toxic Clean-up Day.

Household cleaners

Drain cleaner, oven cleaner, furniture polish, spot removers and disinfectants are just a few household products which can contribute to hazardous waste. Limit the amount of hazardous cleaners and home maintenance products you throw away by using them according to label instructions. Give household chemicals to someone who can use them or dispose of them at a Regional Collection Center or a Toxic Clean-up Day. Empty containers can be taken to a permitted sanitary landfill. Don't bury leftover household chemicals.

Oil and lubricants

Disposing of used oil around your farmstead, such as spreading it on driveways or around buildings and fences can lead to contamination of your family's drinking water supply. Used motor oil contains organic chemicals and metals. A small amount of oil can contaminate very large quantities of groundwater and surface water.

Always store and work with oil, grease and other lubricants away from your water well. Use up grease and other lubricating products, or share them with someone who needs them. Store waste oil in closed, labeled containers until you can take the oil to be recycled. Service stations often accept limited amounts of used oil, or they can inform you of places which do accept it. Waste oil can also be burned in an onsite space heater designed for burning oil as a fuel. Do not mix solvents or fuel with oil because it creates a more hazardous product which will be unsuitable to recycle or reuse.

Latex (water-based) paint is not considered a hazardous material. It can be disposed of in the landfill if it has been dried.

One gallon of fuel is enough to contaminate 750,000 gallons of groundwater and severely pollute drinking water.

Plastic pesticide containers are accepted free-of-charge and recycled at participating permitted sanitary landfills from May 1 through September 1 each year.

Antifreeze

Pouring antifreeze on the ground or into a ditch can lead to possible ingestion by pets, seepage into the water supply or contamination of surface water resources. Store antifreeze in a safe place, secured from children or pets. Antifreeze contains chemicals which are poisonous to animals and humans. Pets will lap up an antifreeze puddle because it tastes sweet. This is often fatal. Antifreeze should not be poured into a septic system, as it may kill organisms the system depends on to break down wastes and can cause the system to fail.

Gasoline and other fuels

Petroleum products are among the most hazardous substances found around the farm and home. Store these products downslope and at least 100 feet from your private water well. Use up old fuels by diluting one part old fuel with five parts new fuel to protect your engine. If disposal of old fuel is necessary, small amounts may be taken to a service station or to your Regional Collection Center. For more detailed information about petroleum product storage and the risks it presents, see Iowa Farm*A*Syst *Assessing Your Petroleum Storage and Management*, publication EDC 273.

Tires

Tire dumps and improperly discarded tires are ideal breeding ground for disease-carrying mosquitoes and rodents. Burning or burying tires is illegal! Toxic gases are released into the air and the oil and ash created during fires can contaminate the soil and threaten surface and groundwater supplies.

Iowa law requires tire retailers to accept your old tires at the time you purchase new ones (usually for a small fee). This is the best way you can dispose of used tires. You may also drop off tires at these locations (for a small fee). Tires are recycled into liners for landfills, fuel for electricity, fuel for cement kilns, and crumb rubber asphalt for running tracks and playgrounds.

Vehicle batteries

Automotive batteries contain lead and sulfuric acid. The lead can contaminate water and the acid can burn skin. A battery contains approximately 18 pounds of toxic metals and a gallon of corrosive acids. Useful batteries should be stored in a safe, dry place, out of direct sunlight, out of reach of children and pets and away from your well. Retailers are required to accept a used battery in exchange when a new one is purchased. Some service stations and scrap metal dealers will take used batteries even if one is not purchased.

Pesticides and pesticide containers

Always be sure stored pesticides are in original containers, properly labeled and in a locked cabinet or building out of the reach of children. To protect your drinking water, store pesticides at least 150 feet downslope from your well.

RCCs will accept pesticide waste from farm and household use. Some RCCs may charge a disposal fee for farm pesticide waste. Call ahead for more information on disposal fees and to make an appointment. Toxic Clean-up Days will also accept pesticide waste from farms.

Unrinsed pesticide containers are a threat to the environment. Nearly 7 ounces of pesticide can remain in an unrinsed 5 gallon container, despite efforts to empty them thoroughly. To help prevent groundwater and surface water contamination, make sure containers are triple-rinsed immediately after emptying. Never store empty containers for rinsing at a later date because the pesticide will dry, making it difficult to remove.

Plastic pesticide containers are accepted free-of-charge and recycled at participating permitted sanitary landfills from May 1 through September 1 each year. All empty containers must be triple-rinsed and have a hole punched in the bottom. Plastic labels and caps must be removed. Call your local landfill to find out their policy on plastic pesticide containers or contact the Agribusiness Association of Iowa for a list of landfills participating in the recycling program.

Paper pesticide containers and most plastic pesticide containers may be burned by farm operators if they originate

on-site. This practice is allowed by the law, but not recommended.

All burning must take place at least one-quarter mile from any inhabited building, livestock or wildlife areas or water source. Only one day's accumulation or 50 pounds, whichever is less, may be burned.

Additionally, be conscious of the wind direction and take precautions to avoid inhaling the smoke.

Some plastic containers cannot be burned because the plastic contains hazardous substances such as beryllium, selenium, mercury, lead, cadmium or arsenic. Open burning of these materials is against Iowa law.

Check the pesticide label for instructions on whether or not it is safe to burn the container. For more information about pesticide handling, see *Assessing Your Pesticide Storage and Management*, publication EDC 271.

Electronics and appliances

Rapid advances in technology leave many personal computers and other electronics such as TVs, VCRs and cell phones, obsolete. E-waste, or electronic waste may be hazardous and includes any discarded product or device that works by electronic circuitry, circuit board or cathode ray tube (CRT). Unused electronics such as central processing units (CPUs), monitors, laptops and TVs are considered E-waste. Approximately 220 million tons of E-waste is generated annually in the U.S.

In Iowa, about 274,000 personal computers were generated as waste in 2001, enough to fill the state capitol dome 10 times. That number is expected to double by 2005.

Computers contain lead and other heavy metals. Some used computer materials can be recycled, refurbished (restored) or reused instead of landfilled. Monitors, keyboards, cords/cables and CPU cases can be recycled. Some Iowa landfills will accept E-waste for recycling.

To locate a recycling site or a computer refurbisher or demanufacturer, contact the Iowa DNR Energy and Waste Management Bureau. See the "For More Information" section found on page 15.

Household appliances such as refrigerators, air conditioners and freezers

contain Freon® and other hazardous materials. Appliances should be returned to a dealer or taken to a recycling location to have hazardous materials removed and parts recovered for salvage (demanufacturing). Some utility companies offer rebates on old appliances.

Construction and demolition

Construction and demolition waste may contain hazardous materials such as asbestos. Some permitted sanitary landfills will accept construction and demolition waste, depending on the contents. It's best to call ahead so that landfill workers can be prepared to accept the waste. Inspection of demolition and deconstruction sites will help you take precautions necessary to safeguard your health and the environment. Demolition of farm buildings is discussed in detail on page 9 of this publication.

Asbestos

Asbestos has been used in over 3,000 commercial products, including a variety of building materials such as insulation, shingles, roofing felts, siding, ceiling and floor tiles, vinyl, asphalt and cement.

It is a common misunderstanding that asbestos containing materials are no longer sold. That is not true. There are still many products on the market containing asbestos. A recent report ranks Iowa 30th in the nation for the number of asbestos related illnesses. Asbestos poses little health risks if the material is in good condition and left undisturbed.

However, exposure to fibers occurs during cutting, sanding and other renovation and demolition activity. Asbestos laden dust can travel great distances and expose the general public.

Prevent your exposure to asbestos fibers and dust by having any building inspected before demolition or deconstruction. Common dust masks do not provide protection from asbestos dust and fibers. Before you begin home repairs, contact the Iowa DNR Air Quality Bureau for information about asbestos-containing products. See the "For More Information" section found on page 16 of this publication.

Asbestos is still used in building materials today.

Human and animal health care products

When possible, unused or outdated prescriptions should be disposed of through a pharmacy, veterinarian clinic, hospital or other health care facility. Most unwanted medications also can be disposed of in domestic trash if certain safety precautions are taken. Securely wrap medications to make sure that children and animals cannot get into them. Do not flush prescription drugs down the toilet or into a septic system.

New evidence and studies show that medications cannot be broken down by septic systems or by existing municipal sewer treatment plants. Traces of prescription drugs are showing up in drinking water. Needles, sharps and lancets should be disposed of in a commercial sharps container or in a rigid plastic container such as a laundry detergent bottle. Seal the container tightly, label it and dispose of it in a permitted sanitary landfill. Commercial sharps containers can be purchased at pharmacies.



For More Information

Iowa Department of Natural Resources

Information

www.iowadnr.com/ 515-281-5918

24 Hour Emergency Spill Reporting

515-281-8694

Iowa DNR Energy and Waste Management Bureau

- Provides information on waste reduction and hazardous materials disposal options
- Administers grant/loan programs available to local governments for the solid waste alternatives program, household hazardous materials education program, Regional Collection Centers and Toxic Clean-up Days
- Maintains a directory of Solid Waste Management agencies

Safe Smart Solutions for Iowa

www.safesmartsolutions.org/

- Provides information on safe handling, storage and disposal of household hazardous materials
- Provides directory of location for do-it-yourself mechanics to take waste fluids, filters, batteries, tires and other automotive products for recycling and proper disposal

DNR Environmental Services

Division Field Offices

Atlantic	712-243-1934
Des Moines	515-725-0268
Manchester	563-927-2640
Mason City	641-424-4073
Spencer	712-262-4177
Washington	319-653-2135

- Assist with understanding Iowa law and DNR rule requirements
- Answer questions and investigate citizen complaints regarding illegal dumping and burning

Iowa DNR Air Quality Bureau

<http://www.iowadnr.com/air/> 515-242-5100

- Answers questions about asbestos inspection and removal
- Provides information on laws that pertain to open burning

Local Solid Waste Management Agency

Contact your county courthouse or board of supervisors for contact information.

- Operates permitted sanitary landfill
- Coordinates community recycling program
- Answers general questions about solid waste disposal
- Provides information on disposal of tires
- Coordinates Toxic Clean-up Days

County Sanitation (County Environmental Health Official)

Contact your county courthouse or board of supervisors for contact information.

- Tests well water
- Provides information on local ordinances
- Investigates nuisance and open dumping complaints

Iowa State University Extension

www.extension.iastate.edu/

Contact your county extension office.

The county extension director may be able to answer your questions or direct you to someone who can.

- Distributes publications on a variety of topics. Publications are available at Iowa State University Extension county offices or from the Extension Distribution Center, Ames, IA 515-294-5247. Many of the publications are available online at www.extension.iastate.edu/pubs/
- Contact for planning a Toxic Clean-up Day

Iowa Department of Agriculture and Land Stewardship (IDALS) Pesticide Bureau

www.agriculture.state.ia.us/pesticidebureau.html/
515-281-8591

- Administers and enforces Iowa pesticide laws



For More Information “Continued”

Regional Collection Centers (RCCs)

Refer to page 17 of this publication for a list of counties served by RCCs and contact information.

- Collect and dispose of household hazardous materials
- Provide direction for the disposal of farm hazardous materials

Iowa Division of Labor Services

www.iowaworkforce.org/labor/asbestos.html

515-281-6175

- Keeps an online list of asbestos contractors

Rechargeable Battery Recycling Corporation

www.RBRC.org/

- Provides a list of rechargeable battery recycling locations
- Provides tips on rechargeable battery use

Earth 911

www.earth911.org/

1-800-cleanup or 1-800-253-2687

- Provides a searchable list of places to recycle or properly dispose of many types of hazardous and non-hazardous materials

Iowa Poison Control Center

1-800-222-1222

- Provides emergency management of poisonings
- Provides a statewide poison information service

RCC Contact Information

County	Phone	Main RCC	County	Phone	Main RCC
Adair	641-743-8343	Metro Waste Authority	Johnson	319-356-5170	Iowa City RCC
Adams Agency	641-347-5022	Prairie Solid Waste	Jones	319-462-4977	Clinton Co. Area SWA
Audubon Agency	641-347-5022	Prairie Solid Waste	Keokuk	319-456-6171	SEMCO
Benton	319-472-2211	Bluestem	Kossuth	641-357-5452	Landfill of North Iowa
Boone	515-433-0591	Metro Waste Authority	Linn	319-373-4771	Bluestem
Bremer	319-352-4574	Bremer Co. RCC	Louisa	319-753-8758	HazChem Center of SE IA
Buchanan	319-440-1080	Bremer Co. RCC	Lucas	515-967-5512	Metro Waste Authority
Buena Vista	712-225-3749	PCB	Madison	515-462-3083	Metro Waste Authority
Butler	319-267-9946	Bremer Co. RCC	Mahaska	641-673-9266	Mahaska County RCC
Carroll	712-792-5001	Metro Waste Authority	Marion	641-828-8545	Metro Waste Authority
Cedar	563-886-6437	Clinton Co. Area SWA	Marshall	641-752-0646	Metro Waste Authority
Cerro Gordo	641-357-5452	Landfill of North Iowa	Mills	712-328-4985	Council Bluffs RCC
Cherokee	712-225-3749	PCB	Mitchell	641-357-5452	Metro Waste Authority
Chickasaw	641-982-4288	Metro Waste Authority	Monona	712-353-6300	Monona County RCC
Clinton	563-243-4749	Clinton Co. Area SWA	Monroe	515-967-5512	Metro Waste Authority
Clarke Agency	641-347-5022	Prairie Solid Waste	Muscatine	563-263-9689	Muscatine County RCC
Crawford	712-792-5001	Metro Waste Authority	Page	712-542-4215	Council Bluffs RCC
Dallas	515-967-5512	Metro Waste Authority	Plymouth	712-225-3749	PCB
Delaware	563-589-1720	Dubuque Co. RCC	Polk	515-967-5512	Metro Waste Authority
Des Moines IA	319-753-8758	HazChem Center of SE IA	Pottawattamie	712-328-4985	Council Bluffs RCC
Dubuque	563-589-1720	Dubuque Co. RCC	Poweshiek	515-967-5512	Metro Waste Authority
Floyd	641-982-4288	Metro Waste Authority	Scott	563-381-1300	Waste Comm. of Scott Co.
Franklin	641-357-5452	Landfill of North Iowa	Shelby	712-792-5001	Metro Waste Authority
Greene	515-967-5512	Metro Waste Authority	Story	515-239-5137	Metro Waste Authority
Grundy	319-824-6967	Metro Waste Authority	Tama	641-484-5061	Bluestem
Hancock	641-357-5452	Landfill of North Iowa	Taylor	641-347-5022	Prairie Solid Waste Agency
Hardin	641-939-5808	Metro Waste Authority	Union	641-347-5022	Prairie Solid Waste Agency
Henry IA	319-753-8758	HazChem Center of SE IA	Van Buren	319-753-8785	HazChem Center of SE IA.
			Warren	515-967-5512	Metro Waste Authority
			Washington	319-456-6171	SEMCO
			Winnebago	641-357-5452	Landfill of North Iowa
			Worth	641-357-5452	Landfill of North Iowa

Assessment: Household Hazardous Materials & Solid Waste Management

These charts are designed to help you evaluate the potential risk for air, land and water contamination as well as other associated hazards that could affect your family's health and safety. The evaluation areas are in the shaded "Risk" column. Choose the risk category that best fits your situation. Note how likely you are to expose yourself to associated hazards as indicated by the "Low Risk", "Moderate Risk" or "High Risk". Not all associated hazards are identified in this publication; only the main hazards are listed under the "Associated Hazard" column.

Be aware that some "High Risk" activities are illegal. Those situations that violate Iowa law are indicated by "!" and printed in bold text.

Hazardous Materials Storage And Handling Risk	Recommended (Low Risk)	Acceptable (Moderate Risk)	Illegal/Unacceptable (High Risk)	Associated Hazard
Location of water wells	<input type="checkbox"/> Hazardous materials are stored and used 100 feet or more from any water well AND <input type="checkbox"/> Drips and spills are contained.	<input type="checkbox"/> Hazardous materials are stored and used 100 feet or more from any water well AND <input type="checkbox"/> Drips and spills are not contained.	<input type="checkbox"/> Hazardous materials are stored or used less than 100 feet from any water	Water Quality More than 14 million Americans drink water contaminated by pesticides, and the EPA estimates 10% of wells contain pesticides. A 1990 statewide survey of rural water wells in Iowa found that 14 percent of private wells contain pesticides.
Storage of hazardous materials	<input type="checkbox"/> Hazardous materials are organized and stored by type to prevent chemical reaction AND <input type="checkbox"/> Hazardous materials are kept in a locked cabinet inaccessible to children or pets.	<input type="checkbox"/> Hazardous materials are stored in an organized way AND <input type="checkbox"/> Hazardous materials are kept in an unlocked location, but are inaccessible to children or pets.	<input type="checkbox"/> Hazardous materials are stored in an unorganized way OR <input type="checkbox"/> Hazardous materials are kept in an unlocked location that is easily accessible to children or pets.	Health & Safety 1,330 exposures to hazardous materials were reported to the Iowa Poison Control Center in 2002. Antifreeze tastes sweet and is attractive to pets and small children. As little as 1 ounce of antifreeze can be fatal to a 15 pound dog. One-third oz can be fatal to a 10 pound cat.
Containers and labeling	<input type="checkbox"/> Leftover hazardous materials are stored in their original containers AND <input type="checkbox"/> Labels are clearly readable.	<input type="checkbox"/> Leftover hazardous materials are stored in their original containers AND <input type="checkbox"/> Labels are difficult to read.	<input type="checkbox"/> Leftover hazardous materials are transferred to other containers such as milk jugs or glass jars OR <input type="checkbox"/> Labels are missing.	Health & Safety

 Indicates a hazardous material

! Violates Iowa law

Hazardous Materials Storage And Handling

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Spill protection

- Hazardous materials are stored on a concrete surface away from floor drains AND
 - Hazardous materials storage area provides containment for potential spills or leaks AND
 - Regular inspection of products demonstrates containers are sealed and secure.
- Hazardous materials are stored on a concrete surface away from floor drains AND
 - Hazardous materials storage area does not provide containment for potential spills or leaks AND
 - Regular inspection of products demonstrates containers are sealed and secure.
- Hazardous materials are stored on a dirt floor or cracked surface OR
 - Hazardous materials are stored near a floor drain OR
 - Hazardous materials storage does not provide containment for potential spills or leaks AND
 - Product containers are damaged OR
 - Products are stored with loose or missing lids.

Water Quality

Ventilation

- Hazardous materials are stored and used in areas with good ventilation AND
 - Hazardous materials are stored and used away from heat, sparks, open flames or other sources of ignition AND
 - Hazardous materials container lids are intact and tightly sealed.
- Hazardous materials are stored and used in areas with poor ventilation such as basements, closets or crawl spaces OR
 - Hazardous materials are stored or used near heat or ignition sources OR
 - Hazardous materials are stored unsealed without lids.

Health & Safety Air Quality

On-Farm Waste Disposal

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Disposal of household trash

- Trash is sorted to separate hazardous and recyclable materials AND
- Household hazardous materials are taken to a Regional Collection Center or Toxic Clean-up Day AND
- Recyclables are taken to a recycling center AND
- Household trash is disposed of at a permitted sanitary landfill AND
- Empty hazardous materials product containers are disposed of at a permitted sanitary landfill.

- Trash is sorted to separate hazardous and recyclable materials AND
- Household hazardous materials are taken to a Regional Collection Center or Toxic Clean-up Day AND
- All other household trash is burned on the farm.

- Trash is burned on the farm without sorting**
- OR
- Trash is buried on the farm.**

Water Quality Land Quality Air Quality

The United States, with only 5% of the world's people, generates 40% of the world's waste. More than 60% of municipal solid waste in the U.S. is recyclable, yet only 13% of it gets recycled.

Location of burn site

These recommendations apply to burning of household trash only. See below for specific rules and recommendations for on-farm disposal of seed bags and pesticide containers.

Burning all other trade waste is prohibited by Iowa law.


- Burn site is confined to a barrel and is located well away from water wells, surface water bodies, buildings and neighboring residences AND
- Leftover ash and sludge is disposed of at a permitted sanitary landfill AND
- There are no sinkholes or ag drainage wells on or near my property.


- Burn site is located on bare ground AND
- Leftover ash and sludge is disposed of at a permitted sanitary landfill.

- Burn site is located near water wells, surface water bodies, buildings and neighboring residences OR
- Burn site is located near a sinkhole or ag drainage well OR
- Leftover ash and sludge is left on the farm.

Water Quality Air Quality

Burning about 10 lbs./day of household trash in a burn barrel may produce as much air pollution as a modern, well controlled incinerator burning 400,000 lbs./day of trash.

 Indicates a hazardous material

 Violates Iowa law

On-Farm Waste Disposal

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Location of burial site

These recommendations apply to burial of farm buildings and farm generated equipment only. On-farm burial of household trash or other farm waste is prohibited by Iowa law.

For more information on burial of livestock, see the Iowa Farm*A*Syst Assessing Your Dead Animal Management Practices publication, EDC 270.

- Burial site is located in soils that are well drained AND
- The lowest elevation of the burial pit is 6 feet or less below the surface AND
- Burial site is downslope from wells or other water bodies AND
- Burial site is 100 feet or more from a private well AND
- Burial site is 200 feet or more from a public well AND
- Burial site is 500 feet or more from a neighboring residence AND
- Burial site is 100 feet or more from surface water bodies (except when burying trees, shrubs, etc).

Water Quality Land Quality

- Burial site is upslope from wells or other water bodies OR
- Burial site is located in soils that are not well drained OR
- The lowest elevation of the burial pit is more than 6 feet below the surface OR
- Burial site is less than 100 feet from a private well OR
- Burial site is less than 200 feet from a public well OR
- Burial site is less than 500 feet from a neighboring residence OR
- Burial site is less than 100 feet from surface water bodies (except when burying trees, shrubs, etc.) OR
- Burial site is located near a sink hole or near an ag drainage well.

Disposal Of Building And Wood Maintenance Products

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Oil based paints, stains, varnishes, thinners and strippers OR

- Leftover product shared and used according to label instructions

Adhesives

Includes caulk and solvent based glues OR

Wood

preservatives

Includes creosote, chromated copper arsenic (CCA) and others.



- Leftover product shared and used according to label instructions
- Leftover product taken to a Regional Collection Center or Toxic Clean-up Day
- Leftover solvents are strained and reused.
- Leftover product disposed of on the farm by burning OR
- Leftover product disposed of on the farm by burial OR
- Leftover product dumped on the ground OR
- Leftover product dumped down a drain or sewer OR
- Leftover product disposed of as a liquid in a permitted sanitary landfill.

**Water Quality
Air Quality**

A Johns Hopkins University study found 300 toxic chemicals and 150 carcinogens may be present in oil or solvent-based paints.

Lead based paint



- Leftover product is taken to a Regional Collection Center or Toxic Clean-up Day.

- Leftover product is reused OR
- Leftover product disposed of on the farm by burning OR
- Leftover product disposed of on the farm by burial OR
- Leftover product dumped on the ground OR
- Leftover product dumped down a drain or sewer OR

**Health & Safety
Water Quality
Land Quality**

Latex paint


- Leftover product shared and used according to label instructions.

- Leftover product allowed to dry AND
- Dried paint and open container taken to a permitted sanitary landfill.

- Product disposed of on the farm by burial OR
- Product dumped on the ground OR
- Leftover product dumped down a drain or sewer OR
- Product disposed of as a liquid in a permitted sanitary landfill.

Health & Safety

 Indicates a hazardous material

 Violates Iowa law

Disposal Of Vehicle Maintenance Products

Risk Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Farm equipment and vehicles

- Farm equipment is traded-in, sold for parts or taken to a salvage yard for recycling.
- All fluids, batteries and rubber tires are removed from the farm equipment and properly disposed of AND
- Freon® is reclaimed from equipment by an EPA certified professional AND
- Equipment is buried according to burial recommendations.
- Tires (500 or less) stockpiled OR
- Tires are stored under cover AND
- Owner has a storage permit from the DNR.
- Tires returned to dealer for recycling OR
- Tires recycled at a participating permitted sanitary landfill.
- Used, unmixed lubricants taken to a participating retailer for recycling OR
- Used, unmixed lubricants taken to a participating landfill for recycling AND
- Unused lubricants shared and used according to label instructions OR
- Unused lubricants taken to a Regional Collection Center or Toxic Clean-up Day.

**Water Quality
Land Quality
Air Quality**

Used tires

- Tires (more than 500) stockpiled OR
- Tires are not stored under cover OR
- Owner does not have a storage permit from the DNR OR
- Tires disposed of on the farm by burning or burial OR
- Tires are illegally dumped.

**Air Quality
Health & Safety
Land Quality**

Burning tires emits toxic heavy metals including mercury, lead, chromium, beryllium, cadmium and arsenic, as well as dioxin, a proven cause of cancer.

Lubricants

Includes waste oil, grease, transmission fluid, hydraulic fluid, brake fluid, etc.




- Used, unmixed lubricants taken to a participating retailer for recycling OR
- Used lubricants burned in a properly designed and approved burner as a supplemental heating source AND
- Leftover sludge is taken to a permitted sanitary landfill.
- Used lubricants disposed of in a permitted sanitary landfill OR
- Used lubricants disposed of on the farm by burning or burial OR
- Used lubricants dumped on the ground OR
- Used lubricants dumped down a drain or storm

Water Quality

Oil from just one oil change is enough to contaminate one-million gallons of drinking water - that's a year's supply for 50 people.

 Indicates a hazardous material

 Violates Iowa law

Disposal Of Vehicle Maintenance Products

Risk

Recommended
(Low Risk)

Acceptable
(Moderate Risk)

Illegal/Unacceptable
(High Risk)

Associated Hazard

Used oil filters



- Used filters taken to a recycling collection site.
- Used filter is punctured and allowed to drain upside down into a container for at least 24 hours to remove all free-flowing and trapped oil AND
- Used filter is disposed of at a participating permitted sanitary landfill.

- Used filter is disposed of at a landfill without removing all free-flowing and trapped oil OR
- Used filter is disposed of on the farm by burning or

Water Quality


Vehicle maintenance drips and spills

- Drips and spills from farm vehicles are contained on a concrete surface with sawdust or oil dry material AND
- Contaminated sawdust or oil dry is taken to a permitted sanitary landfill for disposal.

Water Quality

- Drips or spills are not contained OR
- Drips and spills are flushed down a drain or onto ground OR
- Product disposed of as a liquid in a permitted sanitary landfill OR
- Contaminated sawdust or oil dry from farm vehicles is burned.

 Indicates a hazardous material

 Violates Iowa law

Disposal Of Vehicle Maintenance Products

Risk

Recommended
(Low Risk)

Acceptable
(Moderate Risk)

Illegal/Unacceptable
(High Risk)

Associated Hazard

Antifreeze



- Used antifreeze mixed with fresh antifreeze and reused OR
- Used antifreeze taken to a participating retailer for recycling OR
- Leftover antifreeze taken to a Regional Collection Center or Toxic Clean-up

- Used antifreeze disposed of in a permitted sanitary landfill OR
- Used antifreeze disposed of on the farm by burning or burial OR
- Used antifreeze dumped on the ground OR
- Used antifreeze dumped down a drain or sewer.

Water Quality Health & Safety

Ethylene glycol, the main component of antifreeze is highly toxic to people and animals. Additionally, used antifreeze commonly contains heavy metals and benzene that can contaminate groundwater or cause cancer.

Cleaning solvents

Includes parts cleaner.



- Used solvent filtered and reused OR
- Used or leftover solvent taken to a Regional Collection Center or Toxic Clean-up Day AND
- Leftover solvent shared and used according to label instructions.

- Solvent disposed of in a permitted sanitary landfill OR
- Solvent disposed of on the farm by burning or burial OR
- Solvent dumped on the ground OR
- Solvent dumped down a drain or sewer.

Water Quality Health & Safety Air Quality

Rust removal products



- Leftover product shared and used according to label instructions OR
- Leftover product taken to a Regional Collection Center or Toxic Clean-up Day.

- Leftover product disposed of in a permitted sanitary landfill OR
- Leftover product disposed of on the farm by burning or burial OR
- Leftover product dumped on the ground OR
- Leftover product dumped down a drain or sewer.

Water Quality Health & Safety Air Quality

Indicates a hazardous material
| Violates Iowa law

Disposal Of Vehicle Batteries

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Lead acid batteries

Found in vehicles and farm equipment.



- Batteries traded-in to retailer when new battery is purchased
- OR
- Batteries are taken to a participating permitted sanitary landfill, Regional Collection Center or salvage yard for recycling.

Water Quality
Air Quality
Land Quality

Lead acid batteries contain approximately 18 pounds of toxic lead and one-gallon of corrosive metals. Lead is capable of damaging the nervous system, reproductive system, kidneys and bones and is especially harmful to children.

- Batteries disposed of in a permitted sanitary landfill
- OR
- Batteries disposed of on the farm by burning or burial
- OR
- Batteries illegally dumped.

Nickel-cadmium (Ni-Cad) batteries

Rechargeable batteries found in power tools, kitchen appliances, camcorders, laptop computers, cell phones, etc. OR

Mercuric oxide batteries

Non-rechargeable "button" batteries found in hearing aids, watches, hand held calculators, etc.



- Rechargeable batteries returned to the manufacturer
- OR
- Batteries taken to a Regional Collection Center or Toxic Clean-up Day
- OR
- Batteries taken to a participating electronics recycling program.

Water Quality
Air Quality
Land Quality

Many household batteries contain heavy metals that become hazardous when burned or buried. Exposure to heavy metals can cause severe health problems including brain damage and cancer.

- Batteries disposed of in a permitted sanitary landfill
- OR
- Batteries disposed of on the farm by burning or burial.

Alkaline and carbon zinc batteries

Non-rechargeable batteries found in toys, radios, flashlights and other common household applications.

- Batteries disposed of on the farm by burning or burial.

Water Quality
Air Quality
Land Quality

Indicates a hazardous material

| Violates Iowa law

Disposal Of Pesticides - Including Herbicides, Insecticides, Fungicides and Rodenticides

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Leftover labeled pesticides



- Pesticide used-up according to label instructions
- OR
- Pesticide taken to a Regional Collection Center or Toxic Clean-up Day.

Water Quality
Health & Safety
Air Quality

- Pesticide disposed of in a permitted sanitary landfill
- OR
- Pesticide disposed of on the farm by burning or burial
- OR
- Pesticide dumped on the ground
- OR
- Pesticide dumped down a drain or sewer.

More than 14 million Americans drink water contaminated by pesticides, and the EPA estimates 10% of wells contain pesticides.

Banned or unlabeled pesticides



- Pesticide taken to a Regional Collection Center or Toxic Clean-up Day.

Water Quality
Health & Safety
Air Quality

- Pesticide used
- OR
- Pesticide disposed of in a permitted sanitary landfill
- OR
- Pesticide disposed of on the farm by burning or burial
- OR
- Pesticide dumped on the ground
- OR
- Pesticide dumped down a drain or sewer.

Disposal Of Electronics And Appliances

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Electronics (E-waste)

Includes computers and monitors, televisions, audio video equipment, cathode ray tubes (CRT's), capacitors, circuit boards, etc.



- Electronics are taken to a site for demanufacturing and recycling of parts.
- Electronics are disposed of in a permitted sanitary landfill.

- Electronics are disposed of on the farm by burning or burial OR
- Electronics are illegally dumped.

Water Quality Land Quality

Computer monitors and televisions contain a leaded glass picture tube called a cathode ray tube (CRT). A single computer monitor can contain up to 4 pounds of lead. EPA estimates that half of all heavy metals found in U.S. landfills can be traced back to discarded electronics.

Appliances (white goods)

Includes air conditioners, freezers, refrigerators or other appliances containing polychlorinated bi-phenols (PCB's), mercury containing materials or chlorofluorocarbons (CFC's) such as Freon®.



- Appliances are taken to a participating permitted sanitary landfill for demanufacturing OR
- Appliances are returned to the dealer or manufacturer for demanufacturing OR
- Appliances are taken to other permitted processor (such as a salvage yard) for demanufacturing.

- Appliances are disposed of in a landfill without being demanufactured by a professional OR
- Refrigerants such as Freon® are vented into the atmosphere OR
- Appliances are disposed of on the farm by burning or burial OR
- Appliances are illegally dumped.

Water Quality Health & Safety Air Quality

Though PCB production stopped in the 1970's and 1980's, estimates indicate two-thirds of the total world production remains in use in old products, such as electrical equipment, or in waste dumps from where they continue to leach into the environment.

Ionizing smoke detectors

If unsure of smoke detector type, dispose of as an ionizing model.



- Smoke detectors are returned to the manufacturer OR
- Smoke detectors are taken to a Regional Collection Center or Toxic Clean-up Day.

- Smoke detectors are disposed of in a permitted sanitary landfill OR
- Smoke detectors are disposed of on the farm by burning or burial.

Health & Safety Land Quality

Ionizing smoke detectors contain a small amount of radioactive material that can be released if the smoke detector is destroyed.

Photoelectric smoke detectors

If unsure of smoke detector type, dispose of as an ionizing model (see above).

- Smoke detectors are disposed of at a permitted sanitary landfill.
- Smoke detectors are burned with household trash on the farm.

- Smoke detectors are disposed of on the farm by burning or burial.

Land Quality

Indicates a hazardous material

| Violates Iowa law

Disposal Of Other Household Hazardous Materials

Risk	Recommended (Low Risk)	Acceptable (Moderate Risk)	Illegal/Unacceptable (High Risk)	Associated Hazard
------	------------------------	----------------------------	----------------------------------	-------------------

Thermometers containing mercury



- Thermometers are taken to a Regional Collection Center or Toxic Clean-up Day
- OR
- Thermometers are taken to a participating recycling program.

- Thermometers are disposed of in a permitted sanitary landfill
- OR
- Thermometers are disposed of on the farm by burning or burial.

Water Quality
Land Quality

The amount of mercury contained in one thermometer is enough to contaminate a small lake.

Fluorescent bulbs and lamps



- Used bulbs and lamps are taken to a Regional Collection Center or Toxic Clean-up Day
- OR
- Used bulbs and lamps are taken to a participating recycling program.

- Used bulbs or lamps are disposed of in a permitted sanitary landfill.
- Used bulbs or lamps are disposed of on the farm by burning or burial.

Health & Safety
Water Quality
Land Quality

Exposure to mercury fumes and lead powder from broken fluorescent bulbs can cause serious health risks including permanent nerve and kidney damage.

Combustible fuels



- Fuel used-up according to label instructions
- OR
- Fuel taken to a Regional Collection Center or Toxic Clean-up Day.

- Fuel disposed of in a permitted sanitary landfill
- OR
- Fuel disposed of on the farm by burning or burial
- OR
- Fuel dumped on the ground
- OR
- Fuel dumped down a drain or sewer.

Health & Safety
Air Quality
Water Quality
Land Quality

Clothing and fabric care products

Includes moth balls, spot removers and shoe polish.



- Product used-up according to label instructions
- OR
- Product taken to a Regional Collection Center or Toxic Clean-up Day.

- Product disposed of in a permitted sanitary landfill.
- Product disposed of on the farm by burning or burial
- OR
- Product dumped on the ground
- OR
- Product dumped down a drain or sewer.

Water Quality
Air Quality
Land Quality

Indicates a hazardous material
| Violates Iowa law

Disposal Of Miscellaneous Materials

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Human and animal health care products

Includes pharmacy and veterinary products such as medications, glass vials and sharps (needles, blades and lancets), etc.

- Sharps are contained in a rigid, puncture resistant leak-proof container (such as a liquid laundry detergent container). Container is sealed with duct tape, clearly labeled and disposed of in a permitted sanitary landfill AND
- Unused medications are returned to supplier or pharmacy for proper disposal OR
- Unused medications are taken to a participating Regional Collection Center or Toxic Clean-up Day.

- Sharps are contained in a rigid, puncture resistant, leak-proof container (such as a liquid laundry detergent container). Container is sealed with duct tape, clearly labeled and disposed of in a permitted sanitary landfill AND
- Unused non-liquid medications are disposed of in a permitted sanitary

- Sharps are disposed of on the farm by burning or burial OR
- Unused liquid medications disposed of in a landfill OR
- Unused medications disposed of on the farm by burning or burial OR
- Unused product dumped on the ground OR
- Unused products disposed

Health & Safety Water Quality Land Quality

Traces of prescription medications are showing up in drinking water supplies in Iowa.

Construction and demolition waste

Farm buildings which are constructed entirely of wood materials.


- All building contents are disposed of in an approved manner AND
- Wood is removed and reused or recycled.

- All building contents are removed and disposed of in an approved manner AND
- Local authorities are notified prior to burning OR
- Building is buried in an appropriate manner.

- Building contents are not removed prior to demolition OR
- Building is burned without notifying local authorities OR
- Building is buried without regard to burial regulations.

Health & Safety Water Quality Air Quality Land Quality

 Indicates a hazardous material

 Violates Iowa law

Disposal Of Miscellaneous Materials

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Construction and demolition waste

Improved structures more than wood or dirt.

- | | | | |
|--|--|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Owner notifies Iowa DNR at least 10 working days prior to demolition <input type="checkbox"/> Demolition site is assessed for hazardous materials prior to demolition <input type="checkbox"/> Hazardous waste such as asbestos containing material is sorted out and removed by a trained professional <input type="checkbox"/> Non-hazardous materials are recycled or taken to a permitted sanitary landfill. | <ul style="list-style-type: none"> <input type="checkbox"/> Owner notifies Iowa DNR at least 10 working days prior to demolition <input type="checkbox"/> Demolition site is assessed for hazardous materials prior to demolition <input type="checkbox"/> Hazardous waste such as asbestos containing material is sorted out and removed by a trained professional <input type="checkbox"/> Non-hazardous materials are burned on the farm <input type="checkbox"/> Local authorities are notified prior to burning non-hazardous materials on the farm. | <ul style="list-style-type: none"> <input type="checkbox"/> Owner does not notify Iowa DNR of demolition <input type="checkbox"/> Demolition site is not assessed for hazardous materials prior to demolition <input type="checkbox"/> Buildings are burned or buried without regard to hazardous contents or materials <input type="checkbox"/> Buildings are burned without notifying local authorities. | <p>Health & Safety
Water Quality
Air Quality
Land Quality</p> |
|--|--|--|---|

Disposal Of Miscellaneous Materials

Risk

Recommended
(Low Risk)

Acceptable
(Moderate Risk)

Illegal/Unacceptable
(High Risk)

Associated Hazard

Asbestos



- Asbestos is intact and left undisturbed
- OR
- Asbestos containing material is removed and disposed of by a trained professional.

- Asbestos is carefully removed by the homeowner
- AND
- Asbestos disposed of at a participating permitted sanitary landfill.

- Asbestos containing material is disposed of on the farm by burning or burial.

Health & Safety
Air Quality
Land Quality

Asbestos fibers, when inhaled, become implanted in the lung tissue where their presence is known to cause cancer.

Fencing materials

- Metal or plastic fencing materials (wire, steel, posts, fasteners, etc.) are sorted and recycled or saved for re-use
- AND
- Wood posts are saved for re-use.

- All fencing materials are taken to a permitted sanitary landfill
- OR
- Wood posts are disposed of on the farm by burning.

- Fencing materials are disposed of on the farm by burial
- OR
- Fencing materials are illegally dumped.

Land Quality

Indicates a hazardous material

Violates Iowa law

Disposal Of Product Containers

Risk

Recommended (Low Risk)

Acceptable (Moderate Risk)

Illegal/Unacceptable (High Risk)

Associated Hazard

Unlabeled, partially filled barrels or containers



- Product is identified if possible AND
- Product and container taken to a Regional Collection Center or Toxic Clean-up Day.

Health & Safety
Water Quality
Air Quality

- Product disposed of in a permitted sanitary landfill OR
- Product disposed of on the farm by burning or burial OR
- Product dumped on the ground OR
- Product dumped down a drain or sewer.

Plastic containers and wraps

Includes household hazardous materials containers and empty containers for other hazardous materials such as oil.

This category does NOT include pesticide containers from farm use (see below).

- Empty plastic containers are rinsed and recyclable plastics are taken to a participating recycling program AND
- Non-recyclable plastics are disposed of at a permitted sanitary landfill.

- Empty plastic containers are of properly rinsed and are burned on the farm OR
- Containers are disposed of on the farm by burial.

Air Quality
Land Quality

Burning plastic releases dioxins which can get into the air, soil and water causing cancer, immune system damage, reproductive and developmental problems.

Plastic pesticide containers

This category pertains to plastic pesticide containers resulting from farm use only.

- Empty plastic containers are triple or pressure rinsed and punctured AND
- Containers are taken to a participating permitted sanitary landfill or returned to supplier for recycling.

- Empty plastic containers are not triple or pressure rinsed and punctured OR
- More than one day's supply of containers or more than 50 pounds of containers are burned at one time OR
- Containers are burned less than one-quarter mile away from any occupied building other than the landowner OR
- No more than one day's supply or 50 pounds of containers (whichever is less) are burned at one time.

Air Quality
Water Quality
Land Quality

Rinsing can save money. For many commonly used pesticides, a drip-drained container may still contain as much as 3% of its contents, but rinsing the container and adding the rinse water to the spray mix could save more than \$2.50 for every 25 gallon container.


Indicates a hazardous material

Violates Iowa law

Disposal Of Product Containers

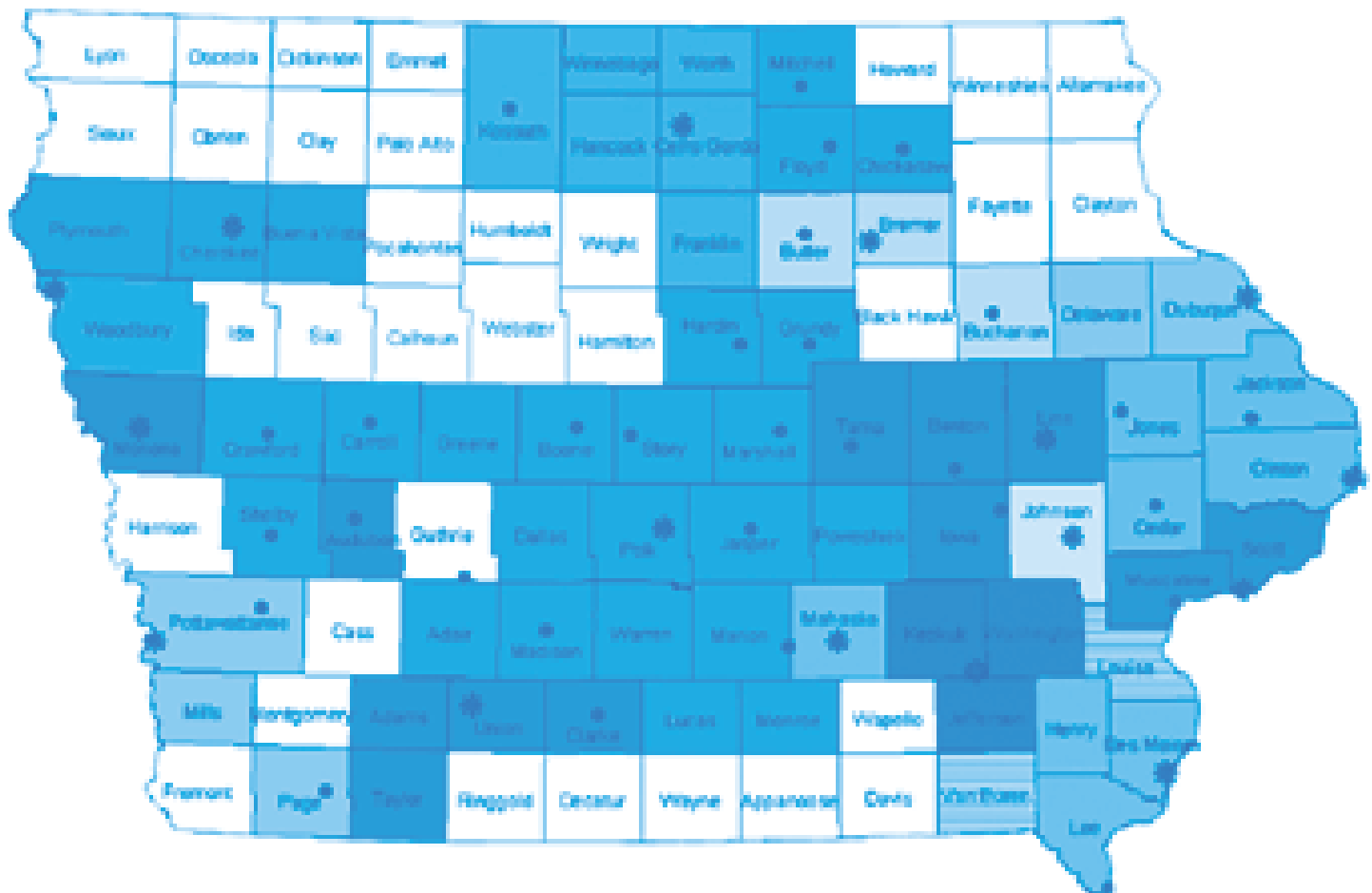
Risk	Recommended (Low Risk)	Acceptable (Moderate Risk)	Illegal/Unacceptable (High Risk)	Associated Hazard
<p>Paper or cardboard pesticide containers</p> <p>OR</p> <p>Seed bags</p>	<p><input type="checkbox"/> Paper or cardboard containers are disposed of at a permitted sanitary landfill.</p>	<p><input type="checkbox"/> Containers are burned in the field or on the farm more than one-quarter mile away from any occupied building other than the landowner AND</p> <p><input type="checkbox"/> No more than one day's supply or 50 pounds of containers (whichever is less) are burned at one time.</p>	<p><input type="checkbox"/> More than one day's supply of containers or more than 50 pounds of containers are burned at one time</p> <p>OR</p> <p><input type="checkbox"/> Containers are burned less than one-quarter mile away from any occupied building other than the landowner</p> <p>OR</p> <p><input type="checkbox"/> Containers are disposed of on the farm by burial.</p>	<p>Health & Safety</p> <p>Water Quality</p> <p>Air Quality</p>
<p>Bottled gas (propane) containers</p> <p>Single use and reusable.</p>	<p><input type="checkbox"/> Empty containers are refilled/reused whenever possible</p> <p>OR</p> <p><input type="checkbox"/> Empty unusable containers are returned to a permitted licensed dealer</p> <p>OR</p> <p><input type="checkbox"/> Empty containers are taken to a participating permitted landfill, punctured and recycled for scrap metal.</p>	<p><input type="checkbox"/> Empty containers are punctured and disposed of in a permitted sanitary landfill.</p>	<p><input type="checkbox"/> Containers are disposed of on the farm by burning or burial</p> <p>OR</p> <p><input type="checkbox"/> Containers are illegally dumped.</p>	<p>Health & Safety</p> <p>Air Quality</p>

 Indicates a hazardous material

 Violates Iowa law

Household Hazardous Materials Regional Collection Centers

Regional Collection Centers (RCCs) are permanent collection facilities designed to assist the public and small business generators with proper management of hazardous materials.



- ★ RCC Locations
- Facilities
- Eastern Solid Waste Agency
- Bremer County Sanitary Landfill
- Clinton County Area Solid Waste Agency
- Council Bluffs Dept. of Public Health
- Dubuque Metro Area Solid Waste Agency
- Hazardous Center of Southeast Iowa
- Hazardous Center Sponsored Toxic Cleanup Days
- Iowa City RCC
- Landfill of North Iowa
- Mahaska County RCC
- Metro Waste Authority
- Monona County Transfer Station & Recycling Center RCC
- PCB Solid Waste Agency
- Prairie Solid Waste Agency
- Southeast HWM RCC
- Southeast Multi-County Solid Waste Agency
- Waste Commission of Scott County



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